

An overview of utilization of bio-oil in hot mix asphalt

ABSTRACT

Due to the high prices of crude oil, the price of asphalt binder has increased tremendously. Thus, many researchers have attempted to find acceptable viscosity cheaper asphalt for pavement construction. The asphalt industry is constantly attempting to reduce its emissions as concerns are growing on global warming. This is done by decreasing the mixing and compaction temperatures of asphalt mixtures without affecting the properties of the mix which is possible through numerous available technologies in the industry. One of these techniques is by using bio-oil technology as a modifier or an extender of the base asphalt binder in pavement mixtures. This paper is an attempt to give general picture of current state of practice for bio-oil presenting the benefits of using of bio-oil technique, producing of bio-oil, and physical and chemical properties of bio-oil. Additionally, the performance of bio-oil modified bitumen is described here as well as the mechanical properties of bio-oil mixtures.

Keyword: Bio-oil production; Bio-oil technique; Bio-asphalt properties; Bio-oil performance